



December 6, 2017

VIA E-FILE

The Honorable Richard G. Andrews  
J. Caleb Boggs Federal Building  
844 N. King Street  
Unit 9, Room 6325  
Wilmington, DE 19801-3555

Re: ***TQ Delta, LLC v. 2Wire, Inc., et al.,***  
**C.A. Nos. 13-cv-1835, 13-cv-2013, 14-cv-954, 15-cv-121-RGA**

Dear Judge Andrews:

Plaintiff, TQ Delta, LLC ("TQ Delta") submits this letter in response to the Court's Order (D.I. 425)<sup>1</sup> requesting each party's position regarding whether claims 2 and 21 of U.S. Pat. No. 7,292,627 ("the '627 patent") impact the parties' proposed constructions for the term "substantially scramble the phase characteristics of the plurality of carrier signals." Plaintiff submits that the plain language of claims 2 and 21 reinforces that TQ Delta's construction is correct.

Claim 2 of the '627 patent depends from claim 1, which is a method claim. Claim 1 recites in relevant part: "combining the phase shift computed for each carrier signal with the phase characteristic of that carrier signal so as to substantially scramble the phase characteristics of the plurality of carrier signals."

While claim 1 states that phase shifts are combined with phase characteristics to substantially scramble the phase characteristics, claim 1 does not expressly recite that the resulting bits are modulated onto the carrier signals. Claim 2 adds a "modulating" step, which recites: "modulating bits of the input bit stream onto the carrier signals having the substantially scrambled phase characteristics to produce a transmission signal with a reduced peak-to-average power ratio (PAR)."

Notably, by virtue of the antecedent "the" in claim 2 ("**the** substantially scrambled phase characteristics"), the modulated bits have the **same** substantially scrambled phase characteristics as those in claim 1. In other words, the phase characteristics of claim 1 are the same phase characteristics of claim 2, and those phase characteristics are substantially scrambled.<sup>2</sup>

Furthermore, those very same substantially scrambled phase characteristics, once modulated on a transmission signal, produce a reduced PAR. PAR is a characteristic of the transmission signal and, thus, PAR exists only after there has been modulation to create a

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<sup>1</sup> Citations are to the docket of 13-cv-1835.

<sup>2</sup> There is a non-substantive difference between the phrase "substantially scramble the phase characteristics" in claim 1 and "substantially scrambled phase characteristics" in claim 2. The recitation of claim 2 ("substantially scrambled phase characteristics") implicitly and inherently exists in claim 1. Since claim 1 performs the action of "combining...to substantially scramble the phase characteristics," the resulting "substantially scrambled phase characteristics" are in the scope of claim 1.

transmission signal. *See, e.g.*, A26 ('008 patent) at 1:65–2:2 (“The PAR of a transmission signal is the ratio of the instantaneous peak value (i.e., maximum magnitude) of a signal parameter (e.g., voltage, current, phase, frequency, power) to the time-averaged value of the signal parameter.”); *id.* at 1:29 (“(PAR) of transmitted signals”); *id.* at 2:2–3 (“PAR of the transmitted signal”); *id.* at 2:6 (“PAR of a transmission signal”); *id.* at 2:8–9 (“PAR of a transmission signal”); *id.* 2:12–14 (“PAR of a signal”); *id.* at 2:30 (“PAR for the transmission signal”); *id.* at 2:46–47 (“transmission signal with a reduced [PAR]”); *id.* at 3:3 (“transmission signal with a reduced PAR”).

Claim 2 clarifies what is already true regarding substantially scrambled phase characteristics in the context of the Family 4 patents—the phase characteristics are substantially scrambled **to produce** a transmission signal with a reduced PAR, just as TQ Delta’s proposed construction explains. In the “combining” step, there is no PAR, because no transmission signal has been produced. However, substantially scrambling during the combining step is performed “to produce” a transmission signal with reduced PAR. Once modulation on a transmission signal is performed, then PAR exists and it, of course, has been reduced. Therefore, claim 2 quite literally supports TQ Delta’s proposed construction, namely that “the phase characteristics of the carrier signals are scrambled to produce a transmission signal with a reduced PAR.”

To the extent that the Court expressed some hesitation in construing “substantially scramble the phase characteristics of the plurality of carrier signals” in terms of its result, *i.e.*, that PAR is reduced, there is legal support for such a construction. *See, e.g., Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1320 (Fed. Cir. 2005) (“[W]e hold that the claim language, the specification, and the expert testimony all illustrate that a ‘substantially uniform magnetic field’ is a field that is sufficiently uniform to obtain useful MRI images.”); *see also ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1375–76 (Fed. Cir. 2009) (“In *Medrad*, we construed the term ‘substantially uniform’ and explained that it does not suggest ‘how much a magnetic field may deviate from absolute uniformity before it is no longer uniform.’ Similarly in this case, the term spike does not suggest the degree to which the spike must be pointed. Thus adding the functional language of ‘for piercing the seal’ is appropriate because it defines the degree to which the spike must be pointed.”) (citation omitted).

Moreover, there is no claim differentiation requirement that language appearing in a dependent claim for the first time cannot be used as a basis for understanding the meaning of a term in the independent claim from which it depends. *See ICU Med.*, 558 F.3d at 1376 (“Although claim differentiation counsels against construing the spike term to require the pointed/piercing features of claim 13, this doctrine is not a rigid rule but rather is one of several claim construction tools.” (citing *Nomos Corp. v. Brainlab USA, Inc.*, 357 F.3d 1364, 1368 (Fed. Cir. 2004))); *see also Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991) (“Claim differentiation is a guide, not a rigid rule. If a claim will bear only one interpretation, similarity will have to be tolerated.” (quoting *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 404 (Ct. Cl. 1967))).

The analysis with respect to claims 20 and 21 is essentially identical to that with regard to claims 1 and 2, and therefore does not need to be repeated here.

Respectfully submitted,

/s/ Michael J. Farnan

Michael J. Farnan

cc: Counsel of Record (via E-File)